In the Drawings

A REPLACEMENT SHEET for changes made to the drawing figures of page 2 is submitted herewith.

In the Claims

The claims are amended as shown on the following pages under the heading AMENDMENT TO THE CLAIMS. The list shows the status of all claims presently in the application and is intended to supersede all prior versions of the claims in the application. Any cancellation of claims is made without prejudice or disclaimer.

REMARKS

Reconsideration of the pending application is respectfully requested on the basis of the following particulars.

1. In the Specification

The specification is amended, as shown in the foregoing AMENDMENT TO THE SPECIFICATION, to provide a more descriptive title in order to obviate the objection to the title in the Office Action of February 22, 2006. No new matter is added, as the changes simply correct minor informalities.

Entry of the AMENDMENT TO THE SPECIFICATION and removal of the objection to the title is respectfully requested in the next Office communication.

2. In the Drawings

Figure 5 is presently amended in the REPLACEMENT SHEET of page 2 of the drawings in order to obviate the objection to the drawings in the Office Action of February 22, 2006. Specifically, the phrase "Prior Art" is added. No new subject matter is introduced, since the specification as originally filed discussed Figure 5 as showing only the prior art operand memory stack in the third full paragraph on page 1.

Acceptance of the REPLACEMENT SHEET and removal of the drawing objection is respectfully requested in the next Office communication.

3. In the Claims

As shown in the foregoing AMENDMENT TO THE CLAIMS, the claims have been amended to better conform to U.S. practice.

A. Claims 12-18

Claims 12, 13 and 15 are amended to better conform to U.S. practice and to remove reference numerals. No new matter is added by these minor changes, and the removal of reference numerals from the claims has no effect on the scope of the claims.

Claim 14 is amended to better conform to U.S. practice, to remove reference numerals and to clarify how the type memory is integrated with the operand memory stack. No new matter is added, since support for the clarification can clearly be found at least in the third full paragraph on page 2 of the originally filed specification.

Claims 16-18 are amended to better conform to U.S. practice, to remove reference numerals and to include multiple dependencies. The fee for multiple dependent claims was paid on May 28, 2002, and the total claim count is twenty, so no additional fees are required. No new matter is added by the minor changes, and because the claims as originally filed were in multiple dependent form.

B. Claims 19-22

Claims 19-21 are amended to better conform to U.S. practice and to remove reference numerals. No new matter is added by these minor changes, and the removal of reference numerals from the claims has no effect on the scope of the claims.

Claim 22 is amended to better conform to U.S. practice and to include multiple dependencies. No new matter is added by the minor changes, and because the claim as originally filed was in multiple dependent form.

Entry of the AMENDMENT TO THE CLAIMS is respectfully requested in the next Office communication.

C. Claim objections

Removal of the objection to amended claim 17 is respectfully requested. Claim 17 was objected to as not further limiting a previous claim. This objection is misplaced, since claim 12, as amended, does not positively recite a calculating machine, as indicated by the language "An operand memory stack *for use in* a calculating machine" (emphasis added). Therefore, claim 12 does not require a calculating machine.

In contrast, claim 17 positively recites a calculating machine including the operand memory stack of claim 12. So claim 17 requires a limitation, namely the calculating machine that is not required by claim 12.

Therefore, claim 17 clearly limits claim 12 further with the positive recitation of a calculating machine, when claim 12 does not require a calculating machine.

Accordingly, removal of this objection is respectfully requested.

4. Rejection of claims 12-22 under 35 U.S.C. § 103(a) as being unpatentable over U.S. patent 3,873,976 (Morris) in view of U.S. patent 4,334,269 (Shibasaki et al.)

This rejection is respectfully traversed on the basis that a *prima facie* case of obviousness has not been established.

A. The cited references do not teach every claim limitation

Reconsideration of this rejection is respectfully requested on the basis that the rejection fails to establish a *prima facie* case of obviousness since the cited references do not teach every limitation of the pending claims.

Neither the Morris patent nor the Shibasaki et al. patent disclose an operand memory stack where operands of different lengths are stored, a type memory that stores coded type information for each operand and where the length of a particular operand type is stored in a table in dependence on the corresponding coded type information, all of which are required by pending claim 12.

The Shibasaki et al. patent is merely representative of prior art constant stack element length data stacks. These types of stacks were discussed in the pending application at pages 1 and 2. The disadvantages of these stacks having uniform stack element length are clearly pointed out, such as the waste of space when storing operands of relatively short length.

The pending claims provide a stack that allows storage of variable length operands without wasting space. Additionally, the stack of the pending claims allow for a continuous type check of the operands by requiring a type memory stack that stores coded type information for each operand.

Neither of the advantages of the pending claims is disclosed or suggested by the Shibasaki et al. patent, since the Shibasaki et al. patent does not disclose an operand memory stack where operands of different lengths are stored, a type memory that stores coded type information for each operand and where the length of a particular operand type is stored in a table in dependence on the corresponding coded type information, as required by claim 12.

Turning to the Morris patent, this patent is drawn to organizing and managing data of different size on the basis of natural data units in order to optimize indexing (col. 1, lines 9-49). The device of the Morris patent is applicable for use in a computer system where the computer has a "1-word" data register and communicates with peripheral devices, that may have different word sizes than the computer, via a buffer register that can store many words of data (col. 1, lines 58 64).

For memory access, the command specifies an address which includes the field's most significant bit (MSB) or least significant bit (LSB) as well as an identifier thereof and the offset of the selected bit from the word beginning or end, while the rest of the field is incrementally accessed according to word length one word at a time (col. 1, line 63 through col. 2, line 2). In the data register, the words are justified if necessary and a transfer between the data and buffer register are of a single word portion containing the field, serially by bit (col. 2, lines 4-11). This process is repeated until the field is exhausted (col. 2, lines 11-13).

The whole point of the device of the Morris patent is to create uniform word size data units, to ease the data processing in a computer, from peripheral (or internal components) that have different word size data units. In other words, the computer uses a single word size for processing, that may be different from the word sizes used by the peripheral devices (or even internal components).

In order to ease processing, the data register converts the different sized words stored in the buffer register into a uniform word length used by the computer, such as 16-bit words (col. 4, lines 33-35). Two types of 16 bit words are used, command

words and data words. Once the data units are standardized, they can be stored in the memory unit, which is of the known type of random access memory.

Nowhere in the Morris patent is there a disclosure of storing operands of different lengths in a stack having variable length elements. In fact, the whole point of the device in the Morris patent is to create data units having uniform word sizes to ease processing. This is in direct contrast to the pending claims, which allow processing to occur with operands of variable length.

The Morris patent further does not disclose a type memory for storing coded type information corresponding to each operand. The portion of the Morris patent relied upon in the rejection, col. 6, lines 38-41, merely describes the size of a certain data field to be read until its length is exhausted, and does not contain type information corresponding to the type of an operand at all. No information on the type of field can be gleaned from the length of the field, since numerous peripherals may be involved, some of which may have the same field length.

Therefore, the Morris patent does not disclose an operand memory stack where operands of different lengths are stored, a type memory that stores coded type information for each operand and where the length of a particular operand type is stored in a table in dependence on the corresponding coded type information, as required by claim 12.

Because neither the Morris patent nor the Shibasaki et al. patent disclose every element of the pending claims, a *prima facie* case of obviousness cannot stand. Accordingly, withdrawal of this rejection is respectfully requested.

B. There is no suggestion to combine the cited references

Reconsideration of this rejection is respectfully requested on the basis that the rejection fails to establish a *prima facie* case of obviousness, since there is no suggestion to combine the cited references.

The whole system in the Morris patent is based upon the use of a "1-word" register. This is an essential portion of the system of the Morris patent, and one of ordinary skill in the art would not be motivated to replace the "1-word" register with the stack of uniform operand elements disclosed by the Shibasaki et al. patent.

Replacing the "1-word" register in the Morris patent with the stack disclosed by the Shibasaki et al. patent would require many tedious modifications in structure, as well as in command programming, to the system of the Morris patent. Such extensive modifications would deter, rather than motivate, one of ordinary skill in the art from making the suggested change.

Since there is no suggestion that would motivate one of ordinary skill in the art to combine the cited references, a *prima facie* case of obviousness cannot stand. Therefore, withdrawal of this rejection is respectfully requested.

C. There is no reasonable expectation of success

Reconsideration of this rejection is respectfully requested on the basis that the rejection fails to establish a *prima facie* case of obviousness, since there is no reasonable expectation of success that the combination of the cited references would function, or even disclose every limitation of the pending claims.

As discussed above, neither the Morris patent nor the Shibasaki et al. patent alone disclose every limitation of the pending claims. Therefore, there is no reasonable expectation that the combination of the Morris patent and the Shibasaki et al. patent would successfully disclose every limitation of the pending claims.

Further, as discussed above, simply replacing the "1-word" register of the Morris patent with the stack disclosed by the Shibasaki et al. patent, would not guarantee that the system of the Morris patent would continue to function as designed,

and major modifications to the system of the Morris patent would be required for any possible chance that the system would still function as designed.

Because there is no reasonable expectation of successfully combining the cited references, a *prima facie* case of obviousness cannot stand, and withdrawal of this rejection is respectfully requested.

D. Official Notice as applied to the dependent claims

With regards to claim 13, the rejection states that it would have been obvious to have a type memory formed in a stack with constant length, since the type memory must keep a one-to-one relationship with the operand stack. The rejection provides no evidence or support for this conclusionary statement.

With regards to claim 14, the rejection states that it would have been obvious to integrate the type memory and the operand memory, since "it makes the most sense" to do so. The rejection further states that this is done in communication theory. However, the rejection provides no evidence or support for these conclusionary statements.

With regard to claim 15, the rejection asserts that it would have been obvious to form the operand memory stack having variable length operands as a virtual stack in a virtual calculating machine, since virtual stacks are well known in the art. The rejection provides no evidence of virtual stacks having variable length operand elements.

With regard to claim 16, the rejection broadly asserts that error checking for length is well known in the art, but provides no evidence of specifically checking the operand type at each read access to the operand memory stack.

Because the rejection provides no evidence or support for the assertions with respect to claims 13-16, withdrawal of this rejection is respectfully requested.

E. Case law as applied to the dependent claims

With regards to claim 18, the rejection states that making a device portable is not found to be a patentable feature and cites *In re Lindberg* (194 F.2d 732, 735, 93 USPQ 23, 26 (CCPA 1952)). This statement is only partially true, in that it is not considered patentable to make an *old device* portable or movable without producing any new or unexpected result (*In re Lindberg*, 194 F.2d 732, 735, 93 USPQ 23, 26 (CCPA 1952)). Here, the rejection fails to establish that the device of the pending claims is old, as discussed above, and therefore, it is a patentable feature to make the device of the pending claims portable.

Moreover, providing a smart card with a virtual calculating machine and operand stack according to the pending claims is not simply making a device portable, but it also modifies the structure of the device and the functionality of the device.

For these reasons, the rejections reliance on *In re Lindberg* is misplaced, and withdrawal of this rejection is respectfully requested.

F. Rejection as applied to method claims 19-22

The rejection of claims 19-22 states that the rejection is proper, since claims 19-22 are simply method steps implementing the structure claimed in claims12-14 and 16.

However, neither the Morris patent nor the Shibasaki et al. patent disclose the steps of: providing stack elements of an operand memory stack for storing operands of different lengths; creating a type memory element of uniform length for each operand stored; storing coded type information containing length information about the length of each corresponding operand in the type memory elements; evaluating the length information at each access to the operand memory stack; and storing the length of a particular operand type in a table in dependence on the corresponding coded type information.

As discussed in more detail above, neither the Morris patent nor the Shibasaki et al. patent disclose the structure required to carry out the method steps of claim 19.

Therefore, since the Morris patent and the Shibasaki et al. patent fail to disclose both the structure and steps required by claim 19 the rejection of claims 19-22 must also fail to establish a *prima facie* case of obviousness for the reasons discussed above.

Accordingly, withdrawal of this rejection is respectfully requested.

5. Conclusion

As a result of the amendment to the specification, drawing and claims, and further in view of the foregoing remarks, it is respectfully submitted that the application is in condition for allowance. Accordingly, it is respectfully requested that every pending claim in the present application be allowed and the application be passed to issue.

If any issues remain that may be resolved by a telephone or facsimile communication with the applicants' attorney, the examiner is invited to contact the undersigned at the numbers shown below.

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Respectfully submitted,

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